

15.2660

27787

S/188/61/000/005/003/006

B117/B102

AUTHOR: Karchagina, Ye. V.

TITLE: Temperature dependence of the fast component of magnetic viscosity of Ni-Zn ferrites

PERIODICAL: Moskovskiy Universitet. Vestnik. Seriya III: Fizika, astronomiya, no. 5, 1961, 59-64

TEXT: The dependence of the fast component of magnetic viscosity of Ni-Zn ferrites on temperature and magnetic field strength was investigated by an impulse method. Six specimens containing 16 mole% NiO, 34 mole% ZnO, and 50 mole% Fe₂O₃ were produced and sintered for 4 hr at 1200°C

(specimen no. 1), 1250°C (no. 2), 1270°C (no. 3), 1320°C (no. 4), 1350°C (no. 5), and 1400°C (no. 6). For all specimens, magnetization curves, hysteresis loops, and magnetic viscosity as a function of the magnetic field strength were plotted in the temperature range from 78°K to the Curie point, which is between 330 and 370°K for all specimens. A differential susceptibility curve was constructed. A device described by

Card 1/3

X

27787

S/188/61/000/005/003/006
B117/B102

Temperature dependence of the ...

R. V. Telesnin and Ye. F. Kuritsyna (Ref. 1: Izv. AN SSSR, ser. fiz., 23, No. 3, 352, 1959) was used for the investigation. The magnetic viscosity of specimens 1, 2, and 6 was found nearly constant between 78 and 320°K, and vanished near the Curie point, where other magnetic properties vanish, too. The magnetic viscosity maximum, however, was different for different specimens. In specimens nos. 3, 4, and 5, the maximum magnetic viscosity τ is a monotonic function of $10^3/T^0$. Considering only the value of magnetic viscosity, the optimum sintering temperatures are 1200, 1275, 1300, and 1350°C. An attempt was made to determine the magnetic viscosity factor for all specimens. It was dependent both on temperature and magnetic field strength. The relative viscosity τ/χ_d as a function of T^0 drops with a rise of temperature. τ_{\max} grows with decreasing temperature whereas the viscosity maximum is shifted toward higher fields. After the initial rejection and the subsequent drop of the electromotive force, all specimens show a second maximum at 78°K, which appears at certain values of the magnetizing field. With increasing field strength it appears earlier, and its amplitude grows until both maxima unite. Behind the second maximum the electromotive force curve drops almost exponentially.

Card 2/3

27757

Temperature dependence of the ...

S/198/61/000/005/003/006
B117/B102

The existence of two maxima indicates two kinds of viscosity. The first maximum is obviously due to electron diffusion. The second maximum is evidently related to irreversible viscosity fluctuations. They are particularly distinct in specimens with a heterogeneous structure due to thermal treatment: At a low sintering temperature, it is an incomplete ferritization, and at high temperature, it is a precipitation of magnetite. I. A. Lednev is mentioned. There are 6 figures and 5 Soviet references.

ASSOCIATION: Kafedra obshchey dlya fizikov (General Physics Department for Physicists)

SUBMITTED: December 23, 1960

Card 3/3

Y. G. Y. V.

Temperature dependence of the rigid part of the magnetic
susceptibility of 14.5% ferrates. Vest. Mosk. un. Ser. 3: Fiz.,
astro. 16 no.5:1963 S-9461. (MIK 14:10)

2. Y. G. Y. V. ay fiziki dlya i zikoy Moskovskogo universiteta.
(Ferrates... Magnetic properties)

112-57-7-14860

Translation from: Referativnyy zhurnal, Elektrotehnika, 1957, Nr 7, p 154 (USSR)

AUTHOR: Yashcheritsyn, P. I., and Karchan, Ya. S.

TITLE: Some Problems of Automation of Control in the Process of Grinding
(Nekotoryye voprosy avtomatizatsii kontrolya v protsesse shlifovaniya)

PERIODICAL: Sb.: Mashinostroitel' Belorussii, Minsk, 1956, Nr 1(2), pp 135-144

ABSTRACT: Bibliographic entry.

Card 1/1

YASHCHERITZYN, P.I., kand.tekhn.nauk; KARCHAN, Ya.S., inzh.

Automation of the production line of certain metal-cutting
equipment. Mash.Bel. no.4:122-131 '57. (MIRA 11:9)
(Metal cutting) (Automatic control)

KARCHAN Y.A.S.

25(5)

PHASE I BOOK EXPLOITATION

SOV/2785

. Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti.
Belorusskoye respublikanskoye pravleniye

. Puti sovershenstvovaniya tekhnologicheskikh protsessov na Minskom
podshipnikovom zavode (Improving Technological Processes at the
Minsk Bearing Plant) Minsk, Gos. izd-vo BSSR, 1958. 226 p.
2,000 copies printed.

Eds.: M. Baranovskiy and F. Kashtanov; Tech. Ed.: N. Stepanova.

PURPOSE: This collection of articles is intended for industrial and
mechanical engineers.

COVERAGE: The collection of articles reviews the attainments of the Minsk State
Bearing Plant since its entry into production during the Fifth Five-Year
Plan and a description is given of the methods adopted by the plant to raise the
technological levels of production through introduction of new machinery and
modern production processes and through the modernization of existing equipment.
The role of Party work in the "struggle" for technological progress is also re-
viewed. The introduction mentions the achievements of the following technical

Card 1/3

Improving Technological Processes (Cont.)

SOV/2785

personnel: P.A. Kovalenko, assistant director of the tooling shop; engineers V.A. Feygin, A.A. Malakhovskiy, and A.F. Segodnik; designer M.Ye. Makhanev; and technologists Ye.S. Artyukhovskaya and A.A. Desyatkovaya. There are no references.

TABLE OF CONTENTS:

Introduction	3
Yashcheritsyn, P.I. (Candidate of Technical Sciences, Director of the Plant), Basic Ways of Improving the Production Technology of Roller Bearings	6
Mukhlya I.Ya. (Secretary of the Party Bureau of the Minsk State Bearing Plant. The Plant Party Organization in the Struggle for Technical Progress	71
<u>Karchan, Ya.S.</u> (Chief Engineer). Improvement of Technological Processes	84
Yashcheritsyn, P.I. (Candidate of Technical Sciences), and Ya.S. Karchan. (Engineer). Automation and Mechanization of Technological Processes	112
Mel'nik, S.L. (Director of the the Labor and Wage Section), Some Problems	

Card 2/3

KARCEAUSKAS, S. A.: Master Agric Sci (diss) -- "Individual treatment in plantations of first-group forests". Minsk, 1958. 16 pp (Min Higher Educ USSR, Beloruss Forestry Engineering Inst im S. M. Kirov), 150 copies (KL, No 5, 1959, 153)

KARCHAVA, A.I., dotsent

Organizational and methodical problems in a study of general morbidity of the population. Sov.zdrav. 14 no.5:s-0 '55

(MLRA 8:12)

1. Direktor nauchno-metodicheskogo byuro sanitarnoy statistiki Ministerstva zdavookhraneniya Gruzinskoy SSR.

(VITAL STATISTICS

morbidity of population, organiz. & methods of study)

KARCHAVA, A.I., dotsent (Tbilisi)

Medical and sanitary statistics in the Georgian Republic. Sov.
zdrav. 19 no.10:25-31 '60. (MIRA 14:1)
(GEORGIA--PUBLIC HEALTH--STATISTICS)

L 43702-66 ENT(1)/ENT(m)/I/ENT(s)/ETI IJR(c) 30/77

ACC NR: AP6020226

SOURCE CODE: UR/0056/66/050/006/1682/1684

AUTHOR: Karchava, T. A.; Sanikidze, D. G.

ORG: Institute of Cybernetics, Academy of Sciences, Georgian SSR (Institut kibernetiki Akademii nauk Gruzinskoy SSR)

TITLE: Heat conductivity of thin dielectric and ferroelectric films and threads

SOURCE: Zh eksper i teor fiz, v. 50, no. 6, 1966, 1682-1684

TOPIC TAGS: heat conductivity, dielectric material, spin wave, phonon scattering, low temperature effect, ferroelectric material

ABSTRACT: The coefficient of heat conductivity has been calculated for thin dielectric and ferroelectric films and threads at low temperatures, when the free path of the phonons and spin waves is much longer than usual. It has been shown that for thin films, gliding phonons and spin waves are the main factors in heat conductivity. In the case of thin threads, the gliding phonons and spin waves serve

Card 1/2

ACC NR: AP6020226

only as corrective elements. Different mechanisms of phonon and spin-wave scattering have been investigated. The authors thank R. N. Gurzhi for suggesting the subject and I. M. Lifshitz for discussions of the results. Orig. art. has: 7 formulas. [Based on authors' abstract] [NT]

SUB CODE: 20, 11/ SUBM DATE: 29Jan66/ ORIG REF: 002/ OTH REF: 003/

Card 2/2 *2977*

KARCHEMSKIY, I.S., vrach-stomatolog (Kirovograd)

Toothache. Zdorov'e 5 no.2:26-27 F '59. (MIRA 12:2)
(DENTISTRY) (TEETH--CARE AND HYGIENE)

KARCHENSKIY, I.S.

Third Kirovgrad Province Conference of Stomatologists and Dentists.
Stomatologiya 38 no.5:83 S-O '59. (MIRA 13:3)
(KIROVGRAD PROVINCE--STOMATOLOGY)

KARCHEMSKIY, I.S.

Alveolar pains. Stomatologiya 38 no.6:59-62 N-D '59.

(MIRA 13:4)

1. Iz Kirovogradskoy oblastnoy stomatologicheskoy polikliniki.
(TEETH--DISEASES)

KARCHEMSKIY, I.S.

Replantation of two teeth. Stomatologiya 39 no.6:69 N-D '60.
(MIRA 15:1)

1. Iz Kirovogradskoy oblastnoy stomatologicheskoy polikliniki.
(TEETH TRANSPLANTATION)

KARCHENSKIY, M.Yu., dotsent.

Platform technique of making reinforced biaxially prestressed
concrete panels. Stroi.prom.32 no.11:26-29 N '54. (MLRA 7:11)
(Reinforced concrete) (Concrete, Prestressed)

KARCHENSKIY, M. Yu.

KARCHENSKIY, M. Yu. --"Investigation of the Technology of the Manufacture and of Several Mechanical Properties of Reinforced Concrete Flexible Plates, Prepared in Two Directions." (Dissertations for Degrees in Science and Engineering Defended at USSR Higher Educational Institutions) Min of Higher Education USSR, Kharkov Engineering Construction Inst, Chair of Reinforced Concrete Construction, Kharkov, 1955

SP: Katshina Jelovis', No. 55, 18 Jun 56

* For ^Degree of Candidate in Technical Sciences

KARCHEMSKIY, M. Yu., dotsent.

Investigation of bent reinforced concrete slabs previously bent
in two directions. Bet. 1 shel.-bet. no. 7:241-245 0 '55.
(Concrete slabs) (MLRA 9:1)

KARCHENSKIY, Moisey Yur'yevich, kand.tekhn.nauk; KORSKEVICH, A., red.;
DANILKINA, N., red.; IOAKIMIS, A., tekhn.red.

[Reinforced concrete slabs prestressed in two directions] Zhelezo-
betonnye plity, predvaritel'no napriazhennye v dvukh napravleniyakh.
Kiev, Gos.izd-vo lit-ry po stroit. i arkhitekt. USSR, 1958. 120 p.
(Concrete slabs) (MIRA 12:3)

KARCHEMSKIY, M.Yu.; kand.tekhn.nauk; SICHEVOY, A.I., inzh.

Preparing prestressed floors with wire-mesh reinforcement
in Dnepropetrovsk. Bet. i zhel.-bet. no.4:175-177 Ap '61.
(MIRA 14:6)

(Prestressed concrete)

KARCHEMSKIY, M.Yu., kand. tekhn. nauk

Testing a reinforced concrete floor above ground level with
compressed air. Bet. 1 zhel.-bet. 9 no.3:142-143 Mr '63.
(MIRA 16:4)

(Floors, Concrete--Testing)
(Compressed air)

KARCHENKO, A.K., SHILIN, A.N.

Statistical report

Report to be submitted for the International Conference on Coal Mines
(Rapid advance of workings in) Liege, Belgium, 30 Sept-4 Oct 63

Bulgaria/Military

B-553

KARCHEV, Georgi, Podpolkovnik/Med Serv; and Lyuben
Dimitrov are the authors of an article entitled "Newly
Developed Bulgarian Medicines." (Voenno Meditsinsko
Delo, Sofia, May 61, pp 92-95)

24
(1)

Bulgaria/Military

B-564

KARCHEV, G., Podpolkovnik, Med Ser; and Lyuben Dimitrov are the authors of an article discussing the new medicines "Ilikuden", an antibiotic used for mycosis; "Aminosin," used to soften cicatrices; and "Redergam," used for angina pectoris and hypertonia. (Voenno Meditsinsko Delo, Sofia, Mar 61, pp 94-96)

24
(1)

L 2488-66 EWT(1)/ETC/BPF(n)-2/ENG(m)/EPA(w)-2 IJP(c) AT
 ACCESSION NR: AP5020720 UR/0057/65/035/008/1372/1377 67
 AUTHOR: Kornilov, Ye. A.; Kovpik, O.F.; Faynberg, Ya. B.; Karchenko, I.F. 44.55
 TITLE: Mechanism of plasma formation during development of beam instability 44.55
 SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 8, 1965, 1372-1377 71.44.55
 TOPIC TAGS: plasma instability, plasma heating, plasma beam interaction, plasma oscillation, electron beam, magnetic field, air, hydrogen, argon
 ABSTRACT: The authors have investigated the production of plasma by a 3-5 mm diameter 10-50 mA beam of 2-5 keV electrons traversing the 40 cm length of a 10 cm diameter glass tube containing air, argon, or hydrogen at different pressures in the presence of a 0-2 kOe longitudinal magnetic field. The plasma density was determined with Langmuir probes, with a 10 kMc/sec interferometer, and by the detuning of a 3 kMc/sec resonant cavity. Oscillations excited in the plasma were received with a dipole antenna outside the chamber and were investigated with a spectral analyzer and with resonance wavemeters. At pressures below a critical value the plasma density was close to the beam density and oscillations near the Larmor frequency were observed. When the pressure was increased through the critical value the plasma density increased and oscillations near the Larmor frequency were observed. When the pressure was increased through the critical value the plasma density increased and oscillations near the Larmor frequency were observed.
 Card 1/2

L 2488-66

ACCESSION NR: AP5020720

cal value the plasma density increased by two or three orders of magnitude (ionizations of 10% were achieved in argon) and oscillations were observed near the Langmuir frequency, which at the plasma densities reached was higher than the Larmor frequency. The plasma density pulsed over a range of 50% at a frequency between 10 and 100 kc/sec. In the region of instability (which is ascribed to the Cerenkov effect), the electron beam lost nearly all its energy to the plasma. The authors believe that their results together with those of L.D. Smullin and W.D. Getty (Phys. Rev. Letters, 9, 1, 3, 1962; J. Appl. Phys., 34, No. 12, 1963) indicate that with a beam of higher power there can be obtained highly ionized hot plasmas, heated by the kinetic energy of the beam. Orig. art. has: 8 figures.

ASSOCIATION: none

SUBMITTED: 26Oct64

ENCL: 00

SUB CODE: ME

NR REF SOV: 004

OTHER: 005

beh
Card 2/2

KARCHEV, K.

"Sewerage and the purification station in the mining village of Chernov."

KLIDROTEKHNIKA I MELIORATSII., Sofia, Bulgaria., Vol. 4, No. 1, 1959

Monthly list of EAST EUROPEAN ACCESSIONS (EEAI), IC, Vol. 8, No. 7, July 1959, Unclas

KARCHEV, V. Ya.

"Experience With Prevention of Angines and Catarrhs of the Upper Respiratory Tracts," Voyenno-Med. Zhur., No. 11, p. 76, 1955.

SMIRNOVA, G.A., aspirantka; KARCHEVA, V.L.

Comparative analysis of efficiency in the production of nonwoven materials and fabrics. Tekst. prom. 25 no.10:54-55 O '65.
(MIRA 18:10)

1. Leningradskiy institut tekstil'noy i legkoy promyshlennosti imeni Kirova (for Smirnova). 2. Starshiy inzh. laboratorii fabriki imeni Nogina (for Karcheva).

KARCHEVSKAYA, A.I.

Studying the principles of agricultural production in the eighth
grade of rural schools. Politekh. obuch. no.6:28-30 Je '58.
(MIRA 11:6)

1. Novosel'skaya srednyaya shkola Ramenskogo rayona Moskovskoy
oblasti.

(Agriculture—Study and teaching)

KARCHEVSKAYA, H.

Category: Poland/General Division. Congresses. Meetings. Conferences. A-4

Abs Jour: Referat Zh.-Biol., No 6, 25 March, 1957, 21346

Author : Karchevskaya, H.

Inst : not given

Title : A Conference of the Institute of Microbiology, Academy of Sciences USSR and the All-Union Institute of Hydrolyzing (?) and Sulfite-Alcohol Industry on the Problem of Fodder Yeast

Orig Pub: Przem. spozywczy, 1956, 10, No 3, 135-136

Abstract: No abstract.

Card : 1/1

-3-

KARCHEVSKAYA, H.

Actinomycosis of the transverse colon. Khirurgiia 37 no.3:24-
26 Mr '61. (MIRA 14:3)

1. Iz kafedry obshchey khirurgii (zav. - prof. M.M. Levin)
pediatricheskogo i sanitarno-gigiyenicheskogo fakul'tetov Khar'-
kovskogo meditsinskogo instituta na baze khirurgicheskogo otde-
leniya 27-y klinicheskoy bol'nitsy (glavnyy vrach A.G. Chipizhenko).
(ACTINOMYCOSIS) (COLON (ANATOMY)---DISEASES)

KARCHEVSKAYA, M. D.

PA 63/49T50

USSR/Medicine - Bacteria, Typhoid Group Jan 49
Medicine - Bacteriology

"Length of Time That Intestinal Bacilli Can Exist
in Milk," M. D. Karchevskaya, Gor'kiy Oblast Inst
of Epidemiol and Microbiol, 2 $\frac{1}{2}$ pp

"Gig 1 Sar" No 1

Gives results of tests conducted to determine the
length of time typhoid, paratyphoid B, Gartner's,
and Flexner's bacilli can survive in milk. Deter-
mined that paratyphoid B bacillus has longest life
span (up to 5 days at 94° and pH 5.5). Flexner's
bacillus has shortest life span (15 min at 25° and
pH 6.8).

63/49T50

1 16621-65

EWI(m)/EWA(d)/EWP(1)/EWP(b) Pad IJP(d) JD/HW

ACCESSION NR: AP4049102

S/0129/64/000/011/0002/0005

AUTHOR: Gulyayev, A. P.; Karchevskaya, N. I.

TITLE: Martensitic transformation in alloys with aging martensite

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 11, 1964, 2-5

TOPIC TAGS: maraging steel, molybdenum containing steel, cobalt containing steel, iron nickel alloy, alloy martensitic transformation, complex alloy martensitic transformation, titanium coating steel

ABSTRACT: An experimental study has been made of the effect of the individual or combined addition of various amounts of Mo, Co, and Ti on the temperature range of the martensitic transformation in Fe-Ni alloys with 20-20.5% Ni. It was found that, in general, the effect of all investigated elements in the Fe-20% Ni alloy is similar to that in steels. Mo sharply lowers the temperature range of martensitic transformation, and with 8% Mo the alloy is austenitic at room temperature. Co and, to a smaller extent, Ti raise the temperature range of martensitic transformation. In complex Fe-Ni-Mo-Co alloys Mo and Co

Cord 1/2

I 16621-65

ACCESSION NR: AP4049102

produce the same effect as in binary Fe-Ni alloys. Ti slightly lowers the M_s point in complex Fe-Ni-Mo-Co-Ti alloys, but has a less pronounced effect on the M_f point. With martensitic transformation completed, all alloys contain 75--85% martensite, except for alloys with 5% Mo, which contain 60--75%. The hardness of annealed (nonaged) alloy does not depend on the austenite-martensite ratio, probably because the hardness of nonaged martensite is practically the same as that of the initial austenite. Hence, in the alloys investigated, the hardness cannot be taken as the criterion of the degree of hardening. Orig. art. has: 2 figures and 3 tables.

ASSOCIATION: TsNIICherMet

SUBMITTED: 00

ENCL: 00

SUB CODE: NM

NO REF SOV: 002

OTHER: 000

ATD PRESS: 3147

Card 2/2

KARCHEVSKAYA, V. K.

"Erysipelatous Infections in Wild Animals." Sub 30 Jan 47, Moscow
Zooveterinary Inst

Dissertations presented for degrees in science and engineering in
Moscow in 1947.

SO: Sum.No. 457, 18 Apr 55

KARCHEVSKAYA, V.K., kandidat veterinarnykh nauk.

Problem of detecting necrobacillosis in living animals. Veterinariia
32 no.1:34-36 Ja '55. (MLRA 34-36)

1. Laboratoriya po izucheniyu bolezney dikikh zivotnykh Moskovskogo
zoozarka.

(NECROSIS--DIAGNOSIS)

KARCHEVSKAYA, V.K., kand. veterinarnykh nauk.

Wild animals as possible carriers of infection. Sbor. trud. Mosk.
zoop. no.1:134-140 '56. (MIRA 10:11)
(Communicable diseases) (Veterinary medicine)

KARCHEVSKAYA, V.K.

KARCHEVSKAYA, V.K., kand. vet. nauk; TARASOV, V.V.

Disinfection by dry heat using the electric energy. Sbor. trud.

Mosk. zoop. no.1:150-155 '56.

(MIRA 10:11)

(Heat as a disinfectant)

(Zoological gardens--Disinfection)

(Electric apparatus and appliances)

KARCHESKAYA, V. K.

USSR / Diseases of Farm Animals. Diseases Caused by Bacteria and Fungi. R

Abs Jour: Ref Zhur-Biol., No 8, 1958, 35822.

Author : Ivanov, M. M., ~~Karcheskaya, V. K.~~
Inst : State Scientific Control Institute for Veterinary Preparations.
Title : Concerning the Problem of Intra-Vitam Diagnosis of Paratyphoid in Domestic and Wild Animals.

Orig Pub: Tr. Gos. Nauchno-kontrol'n. in-ta po vetpreparatam, 1956, 6, 282-287.

Abstract: It was demonstrated that the method of agglutination of stool cultures as developed by Bernhof /Bernhof ?/ is a valuable addition to the generally adopted bacteriological methodology for intra-vitam diagnosis of paratyphoid and dysen-

Card 1/2

11

KARCHEVSKAYA, V.K., kand. vet. nauk.

Erysipelas in wild animals. Sbor. st. Mosk. zoop. no.2:98-107 '58.

(MIRA 11:12)

(Erysipelas) (Communicable diseases in animals)

KARGHEVSKAYA, V.V.

Study of the possibility of obtaining a neogalenic preparation
from belladonna leaves by means of adsorption. Apt.delo 9 no.2:
30-34 Mr-Ap '60. (MIRA 13:6)

1. Iz Laboratorii fizicheskoy khimii (zav. - prof. N.A. Figu-
rovskiy).

(BELLADONNA)

KARCHEVSKAYA, V.V.

Hydrolysis of atropine during its adsorption on carbon in a solution. Sbor. nauch. trud. TSANII 6:99-102 '64.

(MIRA 19:1)

1. Laboratoriya tekhnologii lekarstvennykh form i galenovykh preparatov (rukovoditel' - kand. farm. nauk O.I. Belova)
TSentral'nogo aptechnogo nauchno-issledovatel'skogo instituta.

KARCHEVSKIY, A.F.

Sorption capacity of tissues from rabbits subjected to irradiation
and blood loss. Radiobiologiya 4 no.4:637-638 '64.

1. Khar'kovskiy meditsirskiy institut.

(MIRA 17:11)

L 8809-65 EWG(j)/EWT(m) AMD/SSD/AFWL/Pb-4
 ACCESSION NR: AP4043936

S/0241/64/009/008/0045/0051

AUTHOR: Karchevskiy, A. P.

TITLE: Distribution of phosphorous-32 in organs of animals during acute radiation sickness and in combination with blood loss

SOURCE: Meditsinskaya radiologiya, v. 9, no. 8, 1964, 45-51

TOPIC TAGS: irradiation effect, phosphorous 32, distribution in tissue, organ permeability, radiation sickness

ABSTRACT: Distribution of phosphorous-32 in different organs of rabbits was studied 3.5 and 7 days after the animals had been exposed to whole-body irradiation by 1400 r. Additional studies were made when animals were exposed to 25% blood loss immediately after irradiation. After irradiation the level of phosphorous-32 in various organs showed an increase in some organs (liver, kidneys) and a decrease in others (adrenals, leg muscles). Some organs (cardiac muscle, eyeball) showed no change. These changes are assumed to be due to a disturbance of the permeability of the vascular system and a weakening in the sorption properties of certain internal organs.

Card 1/2

L 8809-65
ACCESSION NR: AP404.936

When acute irradiation is accompanied by blood loss, the inhibition of sorption properties develops somewhat later, thus slightly raising the resistance of tissues to irradiation. Orig. art. has: 2 tables.

ASSOCIATION: Kafedra rentgenologii i radiologii Khar'kovskogo meditsinskogo instituta (Department of Roentgenology and Radiology of the Kharkov Medical Institute)

SUBMITTED: 22Sep63

ATD PRESS: 3100

ENCL: 00

SUB CODE: LS

NO REF SOV:

OTHER: 000

Card 2/2

KARCHEVSKIY, A. I.

USSR/Physics - Semi-conductors

Card 1/1 Pub. 22 - 14/47

Authors : Kikanin, I. K., Academician; Ganey, I. Kh.; and Karchevskiy, A. I.

Title : About the cause of the generation of e.m.f. in semi-conductors subjected to light in a non-homogeneous magnetic field

Periodical : Dok. AN SSSR 99/1, page 51, Nov 1, 1954

Abstract : Experiments intended to find the causes which give rise to e.m.f. in semi-conductors when they are subjected to light in a non-homogeneous magnetic field are outlined. One reference (1954).

Institution : ...

Submitted : ...

24(3)

AUTHORS:

Karchevskiy, A. I., Artjushkov, Ye. V., Kikoin, L. I. SOV/56-36-2-54/63

TITLE:

The Isotopic Shift of the Curie ~~Point in the~~ Hydride and Deuteride of Uranium (Izotopicheskiy sdvig tochki Kyuri v gidride i deuteride urana)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 2, pp 636-657 (USSR)

ABSTRACT:

The detection of the ferromagnetism of uranium hydride and uranium deuteride (Refs 1, 2, 3) made it possible to investigate the isotopic shift of the Curie (Kyuri) temperature. One of these possibilities is given by the fact that the distance between the uranium ions is different in the 2 above-mentioned compounds. There are several methods which permit a sufficiently precise determination of the Curie temperature in ferromagnetics. The authors of the present paper investigated the temperature dependence of the remanent magnetization of samples of uranium hydride and uranium deuteride in order to obtain preliminary results concerning the shift of the Curie point. The remanent magnetization of the samples was measured by an astatic magnetometer. The

Card 1/3

The Isotopic Shift of the Curie Point in the Hydride and Deuteride of Uranium SOV/56-36-2-54/63

authors prepared more than 20 samples of uranium hydride and uranium deuteride. For any investigated sample, a difference was observed between the Curie temperatures of uranium hydride and uranium deuteride. This shift practically does not depend on the degree of purity of the original uranium and it is, therefore, not caused by chemical impurities. Typical curves for the temperature dependence for the remanent magnetization are shown in a figure. According to this figure, the difference of the Curie temperatures of uranium hydride and deuteride amounts to 4° , and the mean error amounts to 0.5° . The shift $\Delta \theta$ of the Curie temperature therefore is equal to $\theta_{UH_3} - \theta_{UD_3} = \Delta \theta = +(4.0 \pm 0.5)^\circ K$. The absolute

value of the Curie temperature cannot be found according to the method described in this paper. The Curie point deduced by extrapolation from the temperature dependence of the remanent magnetization of a given sample practically does not depend on external influences. The authors suggest investigating the absolute value of the Curie temperature of uranium hydride and uranium deuteride, and they thank Academician I. K. Kikoin for suggesting the problem discussed in this paper and for his

Card 2/3

SOV/56-36-2-54/53
The Isotopic Shift of the Curie Point in the Hydride and Deuteride of Uranium
help. There are 1 figure and 4 references, 2 of which are
Soviet.

SUBMITTED: November 18, 1958

Card 3/3

24(3), 24(8)

AUTHOR:

Karchevskiy, A. I.

SOV/56-36-2-55/63

TITLE:

The Magnetocaloric Effect in Hydride and Deuteride of Uranium
(Magnetokaloricheskiy effekt v gidride i deyteride urana)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 36, Nr 2, pp 638-639 (USSR)

ABSTRACT:

By the methods applied in an other paper by the author, only the difference of the Curie (Kyuri) temperatures of uranium hydride and uranium deuteride could be determined; the absolute value of the Curie temperatures could be determined only rather inaccurately. The investigation of the temperature dependence of the magnetocaloric effect is one of the most reliable methods for the determination of the Curie temperature. This method is based on the fact that the temperature of a body is changed by an adiabatic variation of its magnetization:

$$dT = -\frac{T}{C_H} \left(\frac{dJ}{dT} \right)_H dH. J \text{ denotes the magneti-}$$

zation of the body, T - the temperature, C_H - the specific heat, H - the magnetic field strength. Since in ferromagnetic bodies $(dJ/dT)_H$ has its maximum in the Curie point, the

Card 1/3

The Magnetocaloric Effect in Hydride and Deuteride of Uranium SOV/56-36-2-55/63

variation of the temperature at the Curie point has a sharp maximum and the Curie temperature, therefore, can be determined accurately. Since uranium hydride and uranium deuteride are available only as fine powders, a method was developed for the measuring the magnetocaloric effect of such powders. The results of these measurements well agree with the results of other authors for the same substances in monolithic form. A diagram gives the curves for the temperature dependence of the magnetocaloric effect in a magnetic field of 17000 oersted. The maxima of these curves correspond to the following ferromagnetic Curie temperatures: $\Theta_{UH_3} = 182.2^\circ K$ and

$\Theta_{UD_3} = 178.4^\circ K$. According to the above-mentioned curves,

uranium hydride and uranium deuteride have not only different Curie temperatures, but also different values of the magnetocaloric effect. A. G. Orlov, a student of the Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering-Physics Institute) took part in the preliminary investigations of the magnetocaloric effect. The author thanks the supervisor of

Card 2/3

The Magnetocaloric Effect in Hydride and Deuteride of Uranium SOV/56-36-2-55/65

the present paper, Academician I. K. Kikoin, for his constant interest and for his useful advice. There are 1 figure and 6 references, 3 of which are Soviet.

SUBMITTED: November 18, 1958

Card 3/3

KARCHEVSKIY, A. I., Cand Phy-Math Sci -- "Magnetic and electric properties of certain ferromagnetic compounds ~~from Conference~~ non-ferromagnetic components." Mos, 1961. (Mos Eng ~~Eng~~-Phys Inst) (KL, 8-61, 226)

21.2100

30072
S/048/61/025/011/018/031
B104/B102

AUTHORS: Karchevskiy, A. I., and Buryak, Ye. M.

TITLE: Intensity of magnetization and magnetocaloric effect in uranium hydride and uranium deuteride

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 11, 1961, 1387 - 1388

TEXT: The results of a study of the magnetization of UH_3 and UD_3 at 4.2 and 77.4°K in magnetic fields of up to 23 koe are presented. The temperature dependence of magnetization was examined near the Curie point of these compounds along with the magnetocaloric effect over a wide range of magnetic field strengths. The paramagnetic susceptibility of both compounds was measured in the temperature range of 230 - 500°K. In fields of up to 23 kilooersteds the intensity of magnetization of UH_3 at 4.2 and 77.4°K was by 6% higher than that of UD_3 . The temperature dependence of the magnetic susceptibility of both compounds cannot be described by the well-known Curie-Weiss formula. The relation $\chi_{mole} = c_{mole}/(T-T_0) + \chi_0$ is indicated

Card 1/2

24,7800 (1138,1145,1153)

29694
S/181/61/003/010/020/036
B104/B108

AUTHOR: Karohevskiy, A. I.

TITLE: Electrocaloric effect in polycrystalline barium titanate

PERIODICAL: Fizika tverdogo tela, v. 3, no. 10, 1961, 3092 - 3099

TEXT: The reversible temperature change in the case of adiabatic polarization (electrocaloric effect) was studied with polycrystalline BaTiO_3 specimens in external electric fields of up to 7.5 kv/cm at temperatures of from -80 to $+135^\circ\text{C}$. The experimental device is shown in Fig.1. A peak of the electrocaloric effect was observed at 118°C . The position of this maximum was stable in fields from 1.5 to 7.5 kv/cm. The dielectric constant ϵ of the specimens used was determined as a function of temperature. At a temperature of 121°C , $\epsilon(T)$ showed a maximum which shifted linearly with E ($+0.4 \cdot 10^{-3} \frac{^\circ\text{C}}{\text{v/cm}}$). In the case of a second-order phase change, the position of the maximum of the electrocaloric effect does not depend on E . The conversion of BaTiO_3 at 118°C is therefore identical

Card 1/52

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Electrocaloric effect in...

29694

S/181/61/003/010/020/036

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with a second-order phase change. These results are discussed and compared with those of other scientists (Refs. 10 - 14). P. P. Kobeko and I. V. Kurchatov (Zs. Phys., 66, 192, 1930) and L. D. Landau (ZhETF, 7, 19, 1937) are mentioned. The BaTiO_3 specimens were prepared in the laboratory of B. M. Vul. The author thanks V. P. Konstantinova and I.V.Sil'verstrova for discussions, N. Ya. Anisimov for preparation of specimens, and the laboratory assistant A. S. Nikishin for help in the evaluation of experimental data. There are 5 figures and 14 references: 8 Soviet and 6 non-Soviet. The five most recent references to English-language publications read as follows: Ref. 10: H. H. Wieder. J. Appl. Phys., no. 30, no. 7, 1010, 1959; Ref. 11: A. F. Devonshire. Phil. Mag., 40, 1040, 1949; Ref. 12: A. F. Devonshire. Advance in Phys., 3, 85, 1954; Ref. 13: W. J. Merz, Phys. Rev., 91, 513, 1958; Ref. 14: W. J. Merz, Phys. Rev., 76, 1221, 1949.

SUBMITTED: May 19, 1961

X

Card 2/5

21356

188100 1418, 1413, also 1160, 1155 S/126/61/011/004/003/023
E032/E314

AUTHORS: Karchevskiy, A.I. and Nikolayev, V.I.

TITLE: Hall Effect in the Metamagnetic Alloy MnAu₂

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol. 11,
No. 4, pp. 519 - 524

TEXT: Since the experimental data reported by various authors (Meyer, Taglang et al - Refs. 2-5) on the magnetic properties of MnAu₂ are not in complete agreement, the present authors have investigated the Hall effect, the paramagnetic susceptibility, magnetisation and the magnetocaloric effect in MnAu₂. The MnAu₂ alloy was prepared from 99.99% pure Au and electrolytically pure Mn, taken in the stoichiometric ratio. The alloy was prepared using the method described by Meyer and Taglang (Ref. 2). The Hall effect was measured on rectangular specimens placed in an argon atmosphere in magnetic fields up to 36 000 Oe. The paramagnetic susceptibility was measured by the Gouy method and the magnetisation was determined by the ballistic method. No correction was made for the demagnetisation

Card 1/5

21356

Hall Effect

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E032/E314

effect. The magnetocaloric effect was measured by the usual method, i.e. the thermocouple for measuring the temperature was placed in a small hole in the specimen, ensuring reliable thermal contact between the thermocouple joint and the specimen. The results obtained for the Hall effect are illustrated in Figs. 1 and 2, which give the isotherms below and above the Neel point, respectively. Fig. 3 illustrates the Hall effect at room temperature for three different specimens. The paramagnetic susceptibility was found to obey the Curie-Weiss law

$$\chi = C/T - \Theta_p$$

in the temperature region +290 to 500 °C, where $C = 7.2 \times 10^{-3}$ EMU/g and $\Theta_p = 178$ °C, which is in good agreement with the data of Ref. 2. Finally, Fig. 4 shows the magnetisation (EMU/g) as a function of the field

Card 2/5

21356

Hall Effect

S/126/61/011/004/003/023
E032/E314

(Curve a is taken from Ref. 2; Curve \bar{b} represents the results of Kussmann and Raub - Ref. 4; Curve B represents the results of Klitzing and Gielessen - Ref. 4 and Curve \bar{c} represents the present results). The magnetocaloric effect was measured in the range 9 000 to 36 000 Oe, at temperatures between +20 and -140 °C. The ferromagnetic Curie point, as determined from the magnetocaloric effect maximum in large fields, was found to be 100 ± 1 °C. The temperature dependence of the magnetocaloric effect was found to be entirely analogous to that found by Meyer and Taglang (Ref. 2), and indicates that the alloy is antiferromagnetic in weak fields. Thus, the dependence of the Hall effect on the external magnetic field in the metamagnetic alloy $MnAu_2$ below the Neel point suggests that the Hall effect in metamagnetics shows the same regularities as in ordinary ferromagnetics. Acknowledgments to Academician I.K. Kikoin for attention and discussions, to V.I. Kutaytsev for assistance with the preparation of the alloy specimens and to A.S. Nikishin for assistance in the experiments.

Card 3/5

21356

Hall Effect

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E032/E314

There are 4 figures and 6 references: 1 Soviet and
5 non-Soviet.

SUBMITTED: July 11, 1960

Card 4/5

24.7900 1144, 1147 1482

30451

S/126/61/012/003/006/021
E032/E314

AUTHORS: Karchevskiy, A.I. and Nikolayev, V.I.

TITLE: On the Hall effect in the metamagnetic alloy $MnAu_2$

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol. 12,
No. 3, pp. 372 - 375

TEXT: Recent interest in the properties of $MnAu_2$ is due to its metamagnetic behaviour: in a sufficiently strong magnetic field the alloy experiences a transition from the antiferromagnetic to the ferromagnetic state. Previous work by the present authors (Ref. 1 - FMM, 1961, 11, 519) shows that in a wide range of temperatures and magnetic fields the Hall e.m.f. in metamagnetics may be represented by

$$e_H = R_O H + R_I I$$

(1)

where R_O is the classical Hall constant,
 R_I is the ferromagnetic Hall constant,

Card 1/5

30451

On the Hall effect

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EO32/E314

I is the magnetisation, and
 H the true magnetic field in the specimen.
The Hall e.m.f. e_H is referred to unit current density and unit distance between the Hall electrodes. However, I.G. Fakidov and V.N. Novogrudskiy (Ref. 4 - FMM, 1960, 10, 158) have reported that when the alloy $MnAu_2$ goes over into the ferromagnetic state the slope of the $e_H(I)$ curve changes by a factor of 3. On this basis the authors of Ref. 4 conclude that the Hall effect in antiferromagnetic and ferromagnetic states is of different origin. The present authors, on the other hand, now point out that this conclusion is erroneous since the bend in the $e_H(I)$ curve is due to the fact that the Hall e.m.f. of $MnAu_2$ consists of two components, only one of which is proportional to the magnetisation (c.f. Eq. 1). Fig. 1 shows the magnetisation σ (cgs/g) of Hall specimens as a function of the magnetic field H (kOe). These curves are corrected for the demagnetising factor. The two $MnAu_2$ specimens

Card 2/54

30451

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E032/E314

On the Hall effect

(1 and 2 in Fig. 1) were described in detail in Ref. 1. In spite of the care with which the alloy was prepared, the two specimens differed from each other. Fig. 2 shows the experimental curves of the Hall e.m.f. (V_{cm}/A) at room temperature as a function of the magnetic field H (kOe). These curves are again corrected for the demagnetisation factor. Finally, Fig. 3 shows the classical component of the Hall effect as a function of the magnetic field for the two specimens. In order to show the applicability of Eq. (1), it is sufficient to establish that R_o and R_I are constants for the given material and depend on the temperature only. The coefficient R_I can be determined from

$$R_I = e_{\text{extrap}} / I_{\text{extrap}}$$

where e_{extrap} and I_{extrap} are found by extrapolating the $e_H(H)$ and $I(H)$ curves from the region of the paraprocess

Card 3/5-

On the Hall effect

30451
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E032/E314

to $H = 0$. However, it must be emphasised that the corresponding curves must be plotted as a function of the true field in the specimen. The values of R_I for specimens 1 and 2 were found to be -19×10^{-10} and -15.5×10^{-10} Vg/A gauss cm². Using these values of R_I , one can exclude the second component of Eq. (1) and determine the classical component of the Hall effect. A plot of $\Delta e_H = e_H - R_I I$ as a function of the field H was found to give a straight line passing through the origin. This fact leads the present author to the conclusion that the mechanism responsible for the Hall effect in both the ferromagnetic and antiferromagnetic states of MnAu₂ is the same. X

Acknowledgments are expressed to Academician I.K. Kikoin and Yu.M. Kagan for discussions. [Abstracter's note - this is an abridged translation.] There are 3 figures and 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc. The English-language reference quoted is: Ref. 2 - E.M. Pugh - Phys. Rev., 1930, 36, 1503.
SUBMITTED: January 10, 1961
Card 4/5/4

KARCHEVSKIY, A.I.; BURYAK, Ye.M.

Magnetization intensity and the magnetocaloric effect in
uranium hydride and deuteride. Izv. AN SSSR, Ser. fiz. 25
no.11:1387-1388 N '61. (MIRA 14:11)
(Uranium hydride—Magnetic properties)

26.2331

26692
S/056/61/041/005/007/038
B109/B102

AUTHORS: Babichev, A. P., Karchevskiy, A. I., Luromkin, Yu. ...,
Sokol'skiy, V. V.
TITLE: Formation of a current channel through a gas discharge in a
weak magnetic field
PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41,
no. 5(11), 1961, 1378 - 1381

TEXT: The configuration of a toroidal power discharge in a weak magnetic field experimentally studied under three conditions: (a) constant magnetic flux in the liner cross section, (b) constant, and (c) variable longitudinal field at the discharge periphery. The experimental data may be interpreted by a stationary forceless discharge model. Experimental setup: The liner had a diameter of 160 mm. In one series of experiments it was of aluminum which secures a constant magnetic flux in the liner cross section. In another, it was of steel, providing a constant magnetic field strength at the discharge periphery. The steel liner was placed in a coil which could generate a variable magnetic field in the plasma. Operating data: Current in the aluminum (steel) liner 50 ka (35 ka), voltage at the beginning of
Card 1/4

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B109/B102

Formation of a current channel ...

discharge 1.1 kv, length of the first half-wave 600 μ sec, magnetic field at the beginning of discharge up to 1000 oersteds, head of the hydrogen filling between 0.01 and 0.001 mm Hg, plasma conductivity at the axis $6 \cdot 10^{14}$ ($8 \cdot 10^{13}$) CGSE. The exact field distribution may be seen in Fig. 1. For a closer investigation of the discharge character, an alternating magnetic field with variable amplitude and phase was produced with fourfold discharge frequency by means of an auxiliary coil (cf. D. P. Ivanov, V. D. Kirillov, DAN SSSR, 133, 793, 1960). The measuring results are shown in Fig. 2. The field strength $H_z(0)$ at the liner axis and the longitudinal field $H_z(r_0)$ at the periphery underwent a cophasal variation until the moment t_1 . At this moment, the longitudinal and azimuthal components of the magnetic field at the edge of the liner had the same amount. Due to the poor conductivity of plasma, the diffusion time of the magnetic field was relatively short. The observed formation of a current channel which somehow resembles the pinch effect may therefore be described by a stationary forceless discharge model. This holds good for both a constant and a variable external magnetic field. The values calculated with the

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Card 2/4

Formation of a current channel ...

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aid of this model are shown in Fig. 1 as solid and in Fig. 2 as broken lines. Theory and experiments are in good agreement. I. K. Kikoin, B. S. Kadomtsev, and V. D. Shafranov are thanked for discussions. There are 2 figures and 7 references: 6 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: D. J. Lees, M. G. Rusbridge. Conference Report, Uppsala, IV A, p. 955, 1959.

SUBMITTED: May 17, 1961

Fig. 1. Course of the longitudinal (H_z) and azimuthal (H_ϕ) components of the magnetic field strength. (a) thick-walled aluminum liner, (b) non-magnetic-steel liner. Solid curves - forceless discharge model, broken lines - paramagnetic model. Legend: (1) outer wall of the liner.
Fig. 2. Oscillograms of the discharge current J_2 and of the longitudinal field $H_z(0)$ in the middle of the liner with a variable magnetic field (r_0 - liner radius) superimposed.

Card 3/4

KARCHEVSKIY, A.I. (Moskva)

Semiconductor counters of radioactive radiation. Priroda 50 no.1:
96-97 Ja '61. (MIRA 14:1)
(Scintillation counters) (Semiconductors)

34036

S/056/62/042/002/011/055
B102/B138

24.2200

AUTHORS: Karchevskiy, A. I., Buryak, Ye. M.

TITLE: Magnetic properties of the β -modification of uranium hydride and deuteride

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 2, 1962, 375-382

TEXT: Magnetization, paramagnetic susceptibility and magnetocaloric effects of β -UH₃ and β -UD₃ (cubic lattice with $a = 6.632 \text{ \AA}$ and 6.625 \AA , resp.) were studied by the usual methods at low temperatures (4.2-210°K). The susceptibility measurements were also carried out in the range 200-500°K. The molar magnetization of UH₃ was found to be only 6% higher than that of UD₃, independent of external magnetic field. The results of W. E. Henry (Phys. Rev. 109, 1976, 1958). The Curie points determined from the temperature dependence of the spontaneous magnetization were 181°K for UH₃ and 177.5°K for UD₃; from the maximum of the magnetocaloric effect

Card 1/3

Magnetic properties of the ...

S/056/62/042/002/011/055
B102/B138

182.0°K was obtained for UH_3 and 178.4°K for UD_3 . The magnetocaloric effect at the Curie point in UH_3 is 1.4 ± 0.15 times higher than in UD_3 . The molar magnetic susceptibility is given by

$$\chi_{\text{mol}} = C_{\text{mol}} / (T - \theta_p) + \chi_0$$

which is valid for both UH_3 and UD_3 with

$$\begin{aligned} C(\text{UH}_3) &= C(\text{UD}_3) = 0.624; \\ \chi_0(\text{UH}_3) &= +40 \cdot 10^{-6}; \chi_0(\text{UD}_3) = +43 \cdot 10^{-6} \\ \theta_p(\text{UH}_3) &= 176.1^\circ\text{K}; \theta_p(\text{UD}_3) = 175.2^\circ\text{K}. \end{aligned} \quad (3).$$

The results of the measurements are in agreement with calorimetric ones. From the results obtained the following conclusions are drawn: The shift of the Curie point due to the substitution of H by D is $+3.5 \pm 0.5^\circ\text{K}$. The difference in the magnetocaloric effects at Curie point may be explained as follows: (a) $(\partial\sigma/\partial T)_H$ is higher for UH_3 than for UD_3 , due to the temperature dependence of the spontaneous magnetization of these compounds; and (b) the specific heat of UD_3 exceeds that of UH_3 . The difference in the magnetization ratio, $\sigma(\text{UH}_3)/\sigma(\text{UD}_3) = 1.08$ at low temperatures and

Card 2/3

Magnetic properties of the ...

S/056/62/042/002/011/055
B102/B138

$\sigma_s(\text{UH}_3)/\sigma_s(\text{UD}_3) = 1.17$ at the Curie points, shows that the temperature dependence of spontaneous magnetization is different for the two compounds. The magnetic moments only differ in the ferromagnetic, not in the paramagnetic, temperature range. The paramagnetic Curie points, θ_p , are almost equal. Academician I. K. Kikoin is thanked for discussions, B. N. Samoylov for advice and laboratory assistants A. S. Nikishina and V. D. Yakovlev for help. There are 6 figures and 10 references: 4 Soviet and 6 non-Soviet. The four most recent references to English-language publications read as follows: W. E. Henry. Phys. Rev. 109, 1976, 1958; H. E. Flotow et al. J. Am. Chem. Soc. 81, 3529, 1959; E. M. Abraham et al. J. Am. Chem. Soc. 82, 1064, 1960. S. T. Lin, A. R. Kaufman. Phys. Rev. 102, 640, 1956. ✓

SUBMITTED: August 10, 1961

Card 3/3

BABICHEV, A.P.; KARCHEVSKIY, A.I.; MUROMKIN, Yu.A.

Helical instability of a toroidal discharge in a variable magnetic
field. Zhur. eksp. i teor. fiz. 43 no.3:881-885 '62. (MIRA 15:10)
(Electric discharges) (Magnetic fields)

BABICHEV, A.P.; KARCHEVSKIY, A.I.; MUROMKIN, Yu.A.

Some characteristics of a toroidal discharge. Zhur. tekhn. fiz.
33 no.11:1400-1403 N '63. (MIRA 16:12)

S/056/63/044/002/064/065
B185/B102

AUTHORS: Nikolayev, V. I., Shcherbina, Yu. I., Karchevskiy, A. I.

TITLE: The Mössbauer effect in the compound FeSn_2

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
no. 2, 1963, 775-777

TEXT: The antiferromagnetic compound FeSn_2 is one of the most interesting objects to be investigated by the Mössbauer method, since both the isotopes Fe^{57} and Sn^{119} are well suited for studying nuclear γ -ray absorption. The authors measured the absorption of 14.4-keV γ -quanta (source Co^{57} , 270 days half-life) and 23.8-keV γ -quanta (source $\text{Sn}^{119\text{m}}$, 250 days half-life) by a 28 mg/cm^2 thick layer of FeSn_2 deposited on a Be disc. The intensity of the radiation passed through the absorber was measured with a NaI(Tl) crystal connected with a single-channel pulse-height analyzer. The Fe^{57} absorption spectrum of the 14.4-keV quanta contained six well resolved peaks, the distance of the outermost ones

Card 1/2

The Mössbauer effect in the

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B185/3102

corresponding to the source velocity which was (3.9 ± 0.1) mm/sec. From the data so obtained the magnetic field acting on the Fe nucleus in FeSn_2 was calculated to equal 121 ± 4 koe. At $T > T_{\text{Néel}}$ ($T_{\text{Néel}} \approx 380^\circ\text{K}$) the spectrum consists of a single line whose width was (6.7 ± 1.0) at 96°C and (2.7 ± 1.0) at 166°C , where Γ denotes the true line width. The Sn^{119} absorption spectrum for 23.8 γ -rays has, at room temperature, an asymmetrical doublet structure which degenerates at $T > T_{\text{Néel}}$ to a single line. The line splitting is assumed to be due to a magnetic lattice field. The fact that the 23.8-kev γ -ray absorption cross section in FeSn_2 is equal to that in SnO_2 is attributed to the particular role played by the optical branches of the lattice vibrations in the Mössbauer effect. There are 2 figures.

PRESENTED: November 17, 1962

Card 2/2

NIKOLAYEV, V.I.; KARCHEVSKIY, A.I.; TSINOYEV, V.G.; VASIL'YEV, B.V.

Magnetostriction of the metamagnetic alloy MnAu_2 . Zhur. eksp.
i teor. fiz. 45 no.3:480-485 S '63. (MIRA 16:10)

(Manganese-Gold alloys--Magnetic properties)

L 17817-66 EWT(1)/ETC(f)/EPE(n)-2/ENG(m) IJP(c) AT
ACC NR: AP6007207

SOURCE CODE: UR/0056/66/050/002/0307/0314

AUTHOR: Karchevskiy, A. I.

ORG: none

TITLE: Acceleration and capture of electrons by a magnetic trap during electric breakdown

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50, no. 2, 1966, 307-314

TOPIC TAGS: magnetic trap, electron trapping, magnetic trapping, plasma compression, plasma injection

ABSTRACT: Experiments on the injection and compression of plasmoids in magnetic mirror traps were carried out. During a strong magnetic compression (initial intensity of magnetic field, $H_{0z} = 50-100$ oe; final amplitude of magnetic field, $H_{max} = 12-15$ koe) of a comparatively rarefied plasma ($n_{e0} \approx 2 \times 10^{12} \text{ cm}^{-3}$) x-rays with an energy of about 10 kev were emitted from the magnetic mirror. In special experiments the magnetic compression of plasma was realized only after a longitudinal (flowing along the force lines of the magnetic field) current with an amplitude up to 10 ka was transmitted through the plasma. In such cases, at a weak magnetic compression ($H_{0z} = 1000-2000$ oe, $H_{max} = 5-10$ koe), the hard x-radiation ($W \approx 40$ kev) was emitted from the magnetic mirror during the time in which the pulsed magnetic field (~ 300 sec) was maintained. Such emission is completely absent at small coefficients

Card 1/2

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ACC NR: AP6007207

of magnetic compression if a longitudinal current through the plasma is not excited. No significant heating of the plasma occurs during transmission of longitudinal current. The observed emission of x-radiation from the trap is due to the acceleration and capture of a small number of fast electrons during the initial moment of breakdown of the plasma column. The concentration of fast electrons causing the emission of hard x-radiation represents less than 0.1—1% of the density of the electrons of the cold dense plasma inside and outside the magnetic mirror. Orig. art. has: 2 figures.

[JA]

SUB CODE: 20/ SUBM DATE: 06Jul65/ ORIG REF: 004/ OTH REF: 002/ ATD PRESS:

4211

Card

2/2

ACC NR: AP6033411

SOURCE CODE: UR/0057/66/036/010/1775/1778

AUTHOR: Babichev, A.P.; Karchevskiy, A.I.; Muromkin, Yu.A.; Isakov, I.M.

ORG: none

TITLE: Characteristics of a toroidal discharge at low plasma density

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no.10, 1966, 1775-1778

TOPIC TAGS: hydrogen plasma, plasma stability, plasma density, x-ray emission, weak magnetic field

ABSTRACT: The authors have investigated hydrogen plasmas in the aluminum toroidal chamber of the "Bota" installation. The plasmas were excited in hydrogen at from 0.001 to 0.01 mm Hg by discharge through a pulse transformer of a 0.007 F capacitor bank charged to up to 2 kV and were stabilized with a 0.1 to 1.0 kOe longitudinal magnetic field. The plasma density was measured with a double electric probe and a 2 mm wavelength microwave interferometer. When the chamber was well outgassed before the discharge, the plasma density was high (up to $5 \times 10^{13} \text{ cm}^{-3}$) only during the early stage of the discharge and decreased by a factor of from 5 to 20 after 200 or 300 microsec. During the decrease of the plasma density the discharge current decreased in a stepwise manner, and the current breaks were accompanied by simultaneous emission of hard (about 50 keV) x-rays from all parts of the chamber. The electric field in the plasma at this stage was approximately equal to the critical value for

Card 1/2

UDC: 533.9

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continuous acceleration of electrons. The experimental data do not permit any definite conclusions to be drawn concerning the mechanism responsible for the observed behavior of the plasmas. The authors thank Academician I.K.Kikoin for his interest in the work, and V.V.Vasil'tsov and Ye.F.Gorbunova for their participation in the experimental work. Orig. art. has: 2 figures.

SUB CODE: 20

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ORIG. REF: 004

OTH REF: 004

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SOV/136-59-2-6/24

AUTHOR: Karchevskiy, V.A.

TITLE: Some Further Possibilities for the Complex Utilisation of Raw Materials in Non-Ferrous Metallurgy (Nekotoryye rezervy kompleksnogo ispol'zovaniya syr'ya v tsvetnoy metallurgii)

PERIODICAL: Tsvetnyye Metally, 1959, Nr 2, pp 24-27 (USSR)

ABSTRACT: In recent years much work has been done on the improvement of the recovery of valuable metals for raw materials. Work on this has been carried out by the Gintsvetmet, Giredmet, VNIITsvetmet Institutes, the Institut Metallurgii i Obogashcheniya AN Kaz SSR (Institute of Metallurgy and Beneficiation of the AS Kaz SSR) and works research laboratories. This work has shown that the main part of the rare metals goes into process dust and shaft-furnace slags. Based on this, experimental and industrial plant for the complex utilization of dusts and slags are being designed by the Giprotsvetmet, Kazgiprotsvetmet and the Kavgiprotsvetmet organizations. Slag-treatment sublimates will be roasted and subjected to neutral leaching to

Card 1/3

remove most of the zinc and cadmium; the rest, together